

## Soil Evaluator Course Glossary of Terms

**ABC soil:** - A soil having an A, a B, and a C horizon.

**Ablation till:** - Loose, permeable till deposited during the final down wasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

**AC soil:** - A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep rocky slopes.

**Aeolian soil material:** - Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to silty loess.

**Aeration, soil:** - The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

**Aggregate, soil:** - Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

**Alluvium:** - Material, such as sand, silt, or clay, deposited on land by streams.

**Aspect, slope:** - The direction toward which the surface of the soil faces.

**Association, soil:** - A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

**Basal till:** - Compact glacial till deposited beneath the ice.

**Basalt:** - Igneous rock formed by rapid cooling of magma.

**Base saturation:** - The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

**Bedding planes:** - Fine stratifications, less than 5 millimeters thick, in unconsolidated alluvial, aeolian, lacustrine, or marine sediments.

**Bedrock:** - The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

**Bisequum:** - Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

**Bottom land:** - The normal floodplain of a stream, subject to flooding.

**Boulders:** - Rock fragments larger than 2 feet (60 centimeters) in diameter.

**Calcareous soil:** - A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

**Capillary water:** - Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

**Catena:** - A sequence, or "chain" of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

**Cation:** - An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

**Cation-exchange capacity:** - The total amount of exchangeable cations that can be held by the soil, expressed in milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

**Cannery soil:** - A soil that has, on a volume basis, more than 15 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches along the longest axis. A single piece is called a channer.

**Clay:** - As a soil separate: the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class: soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

**Clay film:** - A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

**Claypan:** -. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

**Coarse fragments:** - If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) *15* to 38 centimeters (6 to *15* inches) long.

**Coarse textured soil:** - Sand or loamy sand.

**Cobblestone (or cobble)** - A rounded or partly rounded fragment of rock 3 to 10 inches (7.5 to 25 centimeters) in diameter.

**Colluvium:** - Soil material, rock fragments, or both moved by creep, slide, or local wash and deposited at the base of steep slopes.

**Complex slope:** - Irregular or variable slope.

**Complex, soil:** - A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

**Concretions:** - Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

**Congeliturbate:** - Soil material disturbed by frost action.

**Conglomerate:** - Sedimentary rock formed from gravel and sand.

**Consistence, soil:** - The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:

*loose*, non-coherent when dry or moist; does not hold together in a mass.

*friable*, when moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

*firm*, when moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

*plastic*, when wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

*sticky*, when wet, adheres to other material and tends to stretch somewhat and pull

apart rather than to pull free from other material.

*hard*, when dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

*soft*, when dry, breaks into powder or individual grains under very slight pressure.

*cemented*, hard; little affected by moistening.

**Control section:** - That portion of the soil profile on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

**Coprogenous earth (sedimentary peat):** - Fecal material deposited in water by aquatic organisms.

**Corrosive:** - High risk of corrosion to uncoated steel or deterioration of concrete.

**Dense layer:** - A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

**Drainage class:** - Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. The following seven classes of natural soil drainage are recognized:

*excessively drained*, water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. Excessively drained soils are free of mottling related to wetness.

*somewhat excessively drained*, water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

*well drained*, water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

*moderately well drained*, water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

*somewhat poorly drained*, water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

*poorly drained*, water is removed so slowly that the soil is saturated periodically

during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long periods during the growing season. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

*very poorly drained*, water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

***Drumlin:*** - A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

***Eluviation:*** - The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

***Erosion:*** - The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

***Erosion (geologic):*** - Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

***Erosion (accelerated):*** - Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature, for example, fire that exposes the surface.

***Esker:*** - A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

***Fibric soil material (peat):*** - The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

***Field moisture capacity:*** - The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain.

***Fine textured soil:*** - Sandy clay, silty clay, and clay.

***First bottom:*** - The normal floodplain of a stream, subject to frequent or occasional flooding.

***Flagstone:*** - A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist, 6 to 15 inches (15 to 38 centimeters) long.

***Floodplain:*** - A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

***Foot slope:*** - The inclined surface at the base of a hill.

***Fragipan:*** - A loamy brittle subsurface horizon, low in porosity and organic matter content and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density

than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

**Genesis, soil:** - The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

**Glacial drift:** - Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

**Glacial outwash:** - Gravel, sand, and silt commonly stratified, deposited by glacial meltwater.

**Glacial till:** - Unsorted, non-stratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

**Glaciofluvial deposits (outwash):** - Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

**Glaciolacustrine deposits:** - Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

**Gleyed soil:** - Soil affected by prolonged saturated conditions, resulting in the reduction of iron and other elements in the profile as displayed by gray colors and mottles.

**Gneiss:** - *Metamorphic rock formed from granites and similar rock types.*

**Granite:** - Igneous rock formed by slow cooling of magma.

**Gravel:** - Rounded or angular fragments of rock up to 3 inches (76 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

**Gravelly soil material:** Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, up to 3 inches (7.6 centimeters) in diameter.

**Groundwater:** - Water filling all the unblocked pores of the regolith below the water table.

**Hardpan:** - A hardened or cemented soil horizon or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

**Hemic soil material (mucky peat):** - Organic soil material intermediate in degree of decomposition between the less decomposed fibric and the more decomposed sapric material.

**Horizon, soil:** - A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an upper case letter represents the major horizons. Numbers or lower case letters that follow represent subdivisions of the major horizons. The major horizons are as follows:  
*O horizon*, an organic layer of fresh and decaying plant residue.

*A horizon*, the mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, any plowed or disturbed surface layer containing some organic matter.

*E horizon*, the mineral horizon characterized by the loss of silicate clay, iron, aluminum, or some combination of these.

*B horizon*, the mineral horizon below an O, A, or E horizon. The B horizon is in

part a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has distinctive characteristics such as: (i) accumulation of clay (*Bt*, sesquioxides (*Bs*), humus (*Bh*), or a combination of these (*Bhs*); (ii) strong granular, prismatic, or blocky structure (*Bw*); (iii) redder or browner colors than those in the A horizon (*Bw*); or (iv) a combination of these.

*C horizon*: - The mineral horizon or layer. excluding indurated bedrock, which is little affected by soil-forming processes and does not have the properties typical of the overlying horizon. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

*Cd horizon*: - dense, rather impervious substratum.

*Cr horizon*: - soft, consolidated bedrock beneath the soil.

*R layer*: - hard, consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon but can be directly below an A or a B horizon.

***Humus***: - The well-decomposed, more or less stable part of the organic matter in mineral soils.

***Hydrologic soil groups***: - Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is un-drained.

***Igneous rock***: - Rock originating from the fast (basalt, tephra) or slow (granite) cooling of molten magma at the earth surface or below the surface respectively.

***Illuviation***: - The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

***Impervious soil***: - A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

***Infiltration***: - The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

***Infiltration capacity***: - The maximum rate at which water can infiltrate into a soil under a given set of conditions.

***Infiltration rate***: - The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

***Kame***: - An irregular, short ridge or hill of stratified glacial drift.

**Karst topography:** - The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

**Lacustrine deposit:** - Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

**Large stones:** - Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

**Leaching:** - The removal of soluble material from soil or other material by percolating water.

**Limestone:** - Sedimentary rock formed from soft masses of calcium and magnesium carbonate.

**Liquid limit:** - The moisture content at which the soil passes from a plastic to a liquid state.

**Loam:** - Soil material that is 7 to 27 percent clay panicles, 28 to 50 percent silt particles, and less than 52 percent sand panicles.

**Loess:** - Fine grained material, dominantly of silt-sized panicles, deposited by wind.

**Marble:** - Metamorphic rock formed by alteration of limestone under increased heat and pressure.

**Medium textured soil:** - Very fine sandy loam, loam, silt loam, or silt.

**Metamorphic rock:** - Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline. Examples: gneiss, schist.

**Mineral soil:** - Soil that is mainly mineral material and low in organic material. Its bulk density is greater than that of organic soil.

**Moderately coarse textured soil:** - Coarse sandy loam, sandy loam, and fine sandy loam.

**Moderately fine textured soil:** - Clay loam, sandy clay loam, and silty clay loam.

**Moraine:** - An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

**Morphology, soil:** - The physical makeup of the soil, including the color, texture, structure, consistence, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

**Mottling, soil:** - Irregular spots of different colors that vary in number and size. Mottling generally indicates seasonal poor aeration and impeded drainage. Descriptive terms are as follows:

*Abundance:* - few, common, and many.

*Size:* - *fine* indicates less than 5 millimeters (about 0.2 inch);

*medium* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and

*coarse* more than 15 millimeters (about 0.6 inch).

Size measurements are of the diameter along the greatest dimension.

*Contrast:* - faint, distinct, and prominent.

**Muck (sapric material):** - Dark colored, finely divided, well decomposed organic soil material.

**Munsell notation:** - A designation of color by degrees of three simple variables: *hue*, *value*, and *chroma*. For example, a notation of 10YR 6/4 indicates a color of 10YR hue, value of 6, and a chroma of 4.

**Neutral soil:** - A soil having a pH value between 6.6 and 7.3.

**Organic matter:** - Plant and animal residue in the soil in various stages of decomposition.

**Outwash, glacial:** - Stratified sand and gravel produced by glaciers and carried, sorted, and deposited by glacial meltwater.

**Outwash plain:** - A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth. Where pitted it is generally low in relief.

**Pan:** - A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

**Parent material:** - The unconsolidated organic and mineral material in which soils form.

**Peat (fibric material):** - Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture.

**Ped:** - An individual natural soil aggregate, such as a granule, a prism, or a block.

**Pedon:** - The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

**Percolation:** - The downward movement of water through the soil.

**Permeability:** - The quality of the soil that enables water to move downward through the profile.

Permeability is often expressed in inches per hour reflecting the amount of water moving downward through the saturated soil. Terms describing permeability are:

*very slow:* - less than 0.06 inch.

*Slow:* - 0.06 to 0.2 inch.

*moderately slow:* - 0.2 to 0.6 inch.

*Moderate:* - 0.6 inch to 2.0 inches.

*moderately rapid:* - 2.0 to 6.0 inches.

*rapid:* - 6.0 to 20 inches.

*very rapid:* - more than 20 inches.

**Phase, soil:** - A subdivision of a soil series based on features that affect its use and management.

For example, slope, stoniness, and thickness.

**pH value:** - A numerical designation of acidity and alkalinity in soil.

**Pitting:** - Pits caused by melting ground ice.

**Plasticity index:** - The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

**Plastic limit:** - The moisture content at which a soil changes from semisolid to plastic.

**Plowpan:** - A compacted layer formed in the soil directly below the plowed layer.

**Ponding:** - Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

**Poor filter (in soil survey tables):** - Because of rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

**Poorly (or uniformly) graded:** - Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

**Profile, soil:** - A vertical section of the soil extending through all its horizons and into the



parent material.

**Reaction, soil:** - A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as neutral in reaction because it is neither acid nor alkaline. Acid soils have pH values less than 7, while soils with pH values above 7 are alkaline.

**Regolith:** - The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

**Relief:** - The elevations or inequalities of a land surface, considered collectively.

**Residuum (residual soil material):** - Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

**Rock fragments:** - Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

**Root zone:** - The part of the soil penetrated by the bulk of the plant roots.

**Runoff:** - The precipitation discharged into stream channels from an area. The water that flows off the land surface without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called groundwater runoff or seepage flow from ground water.

**Sand:** - As a soil separate: individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains in southern New England consist of quartz. As a soil textural class: a soil that is 85 percent or more sand and not more than 10 percent clay.

**Sandstone:** - Sedimentary rock containing dominantly sand-size particles.

**Sapric soil material (muck):** - The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

**Saprolite (Cr horizon):** - Unconsolidated residual material underlying the soil and grading to hard bedrock below.

**Schist:** - Metamorphic rock formed from granites and similar rock types.

**Sedimentary rock:** - Rock made up of particles deposited from suspension in water. The principal kinds of sedimentary rock are:

*conglomerate*, formed from gravel and sand.

*sandstone*, formed from sand.

*shale*, formed from clay.

*limestone*, formed from soft masses of calcium carbonate.

There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

**Seepage:** - The movement of water through the soil. Seepage may adversely affect a certain land uses.

**Sequum:** - A sequence consisting of an illuvial horizon and the overlying eluvial horizon.

**Series, soil:** - A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

**Shale:** - Sedimentary rock formed by the hardening of a clay deposit.

**Shrink-swell:** - The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

**Silica:** - A combination of silicon and oxygen. One of the major mineral forms is quartz.

**Silt:** - As a soil separate: individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class: soil that is 80 percent or more silt and less than 12 percent clay.

**Siltstone:** - Sedimentary rock made up of dominantly silt-sized particles.

**Sinkhole:** - A depression in the landscape where limestone has been dissolved.

**Slate:** - Metamorphic rock. formed by alteration of shale under increased heat and pressure.

**Slope:** - The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

**Small stones (gravel):** - Rock fragments less than 3 inches (7.6 centimeters) in diameter.

Small stones may adversely affect specific uses of the soil.

**Soil:** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

**Soil separates:** - Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows:

*very coarse sand:* - 2.0 to 1.0 millimeters.

*coarse sand:* - 1.0 to 0.5 millimeters.

*medium sand:* - 0.5 to 0.25 millimeters.

*fine sand:* - 0.25 to 0.10 millimeters.

*Very fine sand:* - 0.10 to 0.05 millimeters.

*Silt:* - 0.05 to 0.002 millimeters.

*Clay:* - less than 0.002 millimeters.

**Solum:** - The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

**Stone line:** - A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

**Stones:** - Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter.

**Structure, soil:** - The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are:

*Platy:* - laminated.

*Prismatic:* - vertical axis of aggregates longer than horizontal.

*Columnar:* - prisms with rounded tops.

*Blocky*: - angular or subangular.

*Granular*: - rounded grains.

*Structurless*: - soils are either

*single grained*: - each grain by itself, as in dune sand, or

*massive*: - the particles adhering without any regular cleavage, as in many hard-pans.

**Subsoil**: - Technically, the B horizon; roughly, the part of the solum below plow depth.

**Substratum**: - The part of the soil below the solum.

**Subsurface layer**: - Any surface soil horizon (A, E, AB, or EB) below the surface layer. Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from about 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer, ~ or the" Ap horizon. "

**Surface soil**: - The A, E, AB, and EB horizons. It includes all subdivisions of these horizons.

**Taxadjuncts**: - Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

**Terminal moraine**: - A belt of thick glacial drift that generally marks the termination of important glacial advances.

**Terrace**: - An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

**Texture, soil**: - The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are: *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

**Till plain**: - An extensive flat to undulating area underlain by glacial till.

**Toe slope**: - The outermost inclined surface at the base of a hill; part of a foot slope.

**Topsoil**: - The upper part of the soil that is ordinarily rich in organic matter.

**Upland**: - Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

**Valley till**: - In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

**Variant, soil**: - A soil having properties sufficiently different from those of other known soils to justify a new series name, but occurring in such a limited geographic area that creation of a new series is not justified.

**Variegation**: - Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

**Varve**: - A sedimentary layer of a lamina or sequence of laminae deposited in a body of still water within a melting cycle. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

***Weathering:*** - All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

**Well graded:** - Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded (or uniform) soil.

***Wilting point (or permanent wilting point):*** - The moisture content of soil, on an oven-dry basis, at which a plant wilts so much that it does not recover when placed in a humid, dark chamber.